January 8, 1992 **9:32 A.M.**

Acid Rain Proposals Public Hearing San Fran CA

OPENING REMARKS

by Ms. Grant

MS. GRANT: Good morning. Welcome to the second of three public hearings on the acid rain proposed rules. They were proposed on December 3rd, 1991.

My name is Jill Grant. I'm from E.P.A.'s office of general counsel in Washington D.C., and I'll be serving as your hearing officer for this public hearing.

With me is Michael Stenburg, from our regional office, Region 9.

Before we begin to receive your comments, the acid rain program in Washington has asked me to make a few brief remarks on the proposed rules.

After that, I'm going to review the procedures for the hearing, and then we'll go ahead with the comments from the public.

Through the proposed acid rain rules, E.P.A. has tried to develop a flexible, yet accountable, program to achieve emission reductions and sulfur dioxide and nitrogen oxides at the lowest possible cost.

At the same time, the acid rain rules implement legislative provisions designed to encourage

energy conservation and pollution prevention.

The acid rain rule-making package proposed on December 3rd covers four separate, but interrelated, rules: acid rain permits, monitoring requirements, SO_2 emission allowance trading, and excess emissions penalties.

It is our hope that proposing the core program components in this manner will facilitate a broad view of the entire program, and help to elicit the most helpful comments possible.

Public comments and participation have already been valuable in developing the proposed rules, and we expect the final rules to benefit further from additional comments received during the comment period.

The rules proposed on December 3rd will affect virtually all utilities in the country. The Clean Air Act amendments require them to be promulgated by May of 1992. We appreciate your assistance in helping us promulgate the most workable and effective rules possible.

I will now give a brief overview of the rules that have been proposed, starting with the permits rule.

The Clean Air Act requires the acid rain program to be implemented through source operating permits. We have tried to develop permit requirements

which ensure source accountability for the emissions reductions mandated by Title IV, yet afford sources the flexible planing opportunities to help minimize the costs of compliance.

Additionally, we have sought to ensure that the acid rain permit program integrates smoothly with State operating permits under Title V, yet provides national consistency necessary to support an allowance trading market.

The acid rain permits rule has several key components, including requirements concerning certification of a designated representative, permit applications, revisions and challenges, and the selection of certain compliance options provided for in the legislation.

The rule also proposes a procedure for phase one extension provisions of the legislation.

The allowance system rule was developed to provide sources with flexibility to meet their sulfur dioxide emissions limitations economically while providing environmental accountability for compliance with the required national cap on SO_2 emissions.

The proposal establishes requirements for a system for tracking, holding, and transferring allowances,

as well as for the establishment and operation of allowance accounts.

The proposal also includes requirements relating to the distribution of allowances from the conservation and renewable energy reserve.

The continuous emissions monitoring rule, or the CEM rule, is designed to measure source compliance and instill confidence in the market-based approached, by certifying the existence and quantity of the allowances being traded.

The CEM proposal includes requirements for the continuous monitoring of sulfur dioxide, volumetric flow, nitrogen oxides, diluent gas, and opacity for affected units.

The proposal also contains provisions covering measurement of carbon dioxide monitor certification procedures, performance verification tests, and record keeping and reporting requirements.

Finally, the excess emissions rule defines the consequences for, and responsibilities of sources, which fail to comply with the acid rain program's requirements.

The requirements of this rule provide a strong market-based incentive through penalties and offset provisions for sources to ensure compliance with the

reduction requirements of the law.

We look forward to hearing your comments on any and all aspects of these rules.

To that end, I'd now like to review with you the ground rules for the public hearing.

The purpose of this hearing is for E.P.A. to get the benefit of your comments on the proposals.

As a consequence, during this proceeding, E.P.A. will not advocate any particular point of view and will not engage in any lengthy discussions of the rules.

We will, instead, listen to and record your testimony, and where necessary to fully understand it, will ask clarifying questions.

Because not too many people have signed up to testify, I won't be too strict about the ten minute requirement, ten minute time limit that was set in the instructions, I think, you were given.

If you wish to address the panel, please make sure that you signed in at the table outside the room. Those who had preregistered are going to speak first. Any additional speakers will be called in the order that they sign up.

I'll adjourn the hearing when everyone has had a chance to speak, and that looks like it will be well

before four-thirty.

When your name is called to speak, you should come up to the podium, announce your name, and spell it for the court reporter, and your affiliation, and begin your presentation.

We request that if you have not already presubmitted your remarks to the public hearings hotline and you have a copy available, please give a copy to Tricia, who was the person sitting at the table. If you don't have a copy now, it doesn't matter, you can submit one for the docket.

You should address your remarks to the panel, which is why we tried to turn the podium a little bit. You are not expected to answer questions from the audience.

A transcript of the hearing will be made by the court reporter and will be placed in docket A-91-89 -- I think it's 89, or is it 69 -- 69,I think, which is the overall docket for these rule makings.

The public comment period for the proposal will remain open until February 3rd, as stated in the proposals in the "Federal Register" notice.

The record will be kept open for comments on testimony given today until 30 days after the hearing,

which would be a few days later, February 7th.

If you have supplemental remarks, in addition to your testimony, you may submit them to the central docket section of E.P.A. at the address listed in the proposed notice.

Again, I'd like to emphasize that we encourage your comments on all facets of the rules.

While we have tried to make the proposals as clear as possible, if you have questions or believe certain provisions are ambiguous, we encourage you to submit comments to that effect, along with your recommendations for removing the perceived ambiguity.

We are also, particularly, interested in the practical implications of the provisions which you are concerned about. Case examples are very effective in helping E.P.A. understand the consequences of the proposal.

Additionally, while it is important for us to understand your concerns, it is also important that you submit comments of support for provisions which you believe should be retained. Failure to do so could provide an unbalanced perception of lack of support for specific provisions.

Finally, we are committed to promulgating

these rules as expeditiously as possible. You can help us in this effort by providing any supplemental comments to the docket as soon as possible. But, in any case, no later than the close of the comment period, or February 3rd.

I think I'd now like to call the first speaker, who is Mr. Frank Strehlitz from Pacific Gas and Electric Company.

PRESENTATION - PACIFIC GAS AND ELECTRIC COMPANY

by Mr. Strehlitz

MR. STREHLITZ: Good morning. I am Frank Strehlitz from Pacific Gas and Electric, spelled S-t-r-e-h-l-i-t-z.

And, you'll forgive me if I don't maintain eye contact. It's a little difficult.

Being first speaker, I want to welcome you to San Francisco, and hope that you have some time to enjoy our city. And, since there aren't a whole lot of speakers, hopefully you'll have the whole afternoon.

PG&E is one -- and, by the way, in -- to start off with, my comments reflect, today, are strictly with regard to CEM, continuous monitoring, and in response to your admonition, we support whole-heartedly the alternative provisions that you have provided. We just

have a few comments on some changes that we'd like to recommend to those.

PG&E is one of the largest investor-owned utilities in the United States. We operate a diverse generation system, electric generation system. We have nuclear plants, we have hydro plants, we have pumped hydro plants, we have gas and oil fired plants. And geothermal plants. We have the largest geothermal generation capability in the United States.

We serve northern and central California. And, we are a leader in energy conservation in the nation.

As I said, my comments today are strictly with regard to the CEM proposal and, in that regard, strictly with regard to the options for SO_2 monitoring and the requirement for NOX and diluent monitoring.

The proposed CEM proposal before us would require PG&E to retrofit with new fuel oil meters and NOX and diluent monitors in all of it's 31 gas and oil fired boilers. I estimate that this will cost approximately $18-million.

I have a hand out for you that I'd like to give you which kind of summarizes three points, or three changes I'd like to recommend, and has some tables attached.

If I could call your attention to the table on the second page of the hand out -- and the audience will have to bear with me. You can't see what we're doing here.

If somebody would like one, by the way, I brought a lot of extras. I didn't know how big this hearing would be, so.

In this table you will note that we've basically provided the capacity factors and the percent oil burns for all of our units. And the capacity factors are highlighted in bold type, and the percent oil is in the small type.

The main thing I want you to try to focus on are the 120 megawatt and smaller units, with regard to their very low utilization and very low oil burning.

It is my hope that this data will substantiate the three changes, or at least provide support for the three changes which we'd like to propose.

The first change that we would like to propose is that for gas and oil fired units, where the oil serves as a back-up fuel, that the operator be allowed the option to continue using the existing fuel oil meters that have greater than a plus or minus two percent error.

Now, in order to choose this option, the

operator should be required to arbitrarily add the design error of the existing meters, as established by the manufacturer. And this would be for the purpose of reporting SO_2 emissions for the acid rain program.

This would provide an economical option to continue utilizing existing fuel oil meters on most of our old and small units, which very seldom burn oil, provided we add the typical six percent error to our observed readings.

The net effect of this would be a possible, slight, over-reporting of sulfur dioxide emissions for PG&E. And, the reason I say possible, as you can see from the data, there are years when there is no oil burned so there would be no over-reporting.

And, in addition to that, the meters themselves might be on the low side so that adding the six percent actually isn't a real over-reporting.

If available, we estimate that we would select this option for 13 of our smaller units, saving a million dollars in capital expense.

We believe that this option has an economic merit, and that it is self-limiting. The value of the over-reported SO_2 allowances would assure that where justified by the capacity factor, the amount of oil

burned, and the expected unit life, that an operator would choose to install the new high accuracy meters.

And, on the third page of the hand out that I've provided, I've given an example for a typical PG&E unit. I've chosen Contra Costa Unit 4.

For the period 1980 to 1989, which as some basis in various aspects of the acid rain program, I estimate that the cost of the over-reported emissions would be, essentially, $450.00, whereas, the cost to install the new -- that's per year. The cost to install the new fuel oil meter is $12,000.00 per year.

Furthermore, under the assumptions of the example I've provided, the maximum over-reporting for any oil fired unit in the country would be eight tons per year, at which point it would become more economical for the operator to install high accuracy fuel meters.

The second suggestion we have is that you provide an option for gas and oil fired units that are subject to an absolute, regulatory higher fuel sulfur limit, to default to this limit for purposes of calculating and reporting their SO_2 emissions.

This is not a new issue to you. I know that Con Edison has been pushing it very hard. I'm not going to belabor the point today, except to say that we support

it.

And, again, it has a nice feature to it in that it is an economically, self-limiting option.

If, for example, we were to be using point-four percent sulfur oil instead of the point-five we're allowed, it very quickly becomes advantageous for us to install higher accuracy meters.

The third suggestion we have is that you provide an alternative to continuous emission monitoring for nitric oxides, and the diluents, for gas-dominated units, with typical annual capacity factors under 30 percent, and these units would, obviously, have to not be subject to nitric oxide emission regulations.

Our smaller, inefficient gas and oil fired units are used primarily for peaking and back-up duty. They incur long periods of non-operation.

I believe that nitric oxide emission calculation methods can provide accurate information on the emission from this type of unit.

Specifically, PG&E currently utilizes a computer based program which calculates the nitric oxide emissions from all of these units on an hourly basis. And that's not real time, that's after the fact. It can be done a month, on a monthly basis after the fact.

This program uses a unit load versus nitric oxide emission algorithm which is based on actual unit data.

In order to ensure that emissions are not under-reported, it would be appropriate for the Agency to establish requirements for how the unit test data is to be obtained, and the criteria of establishing the nitric oxide emission versus load curves.

We would be happy to host a presentation to members of E.P.A. technical staff on PG&E's current computer program, and approach to this calculation procedure. And, we would be happy to make the program available to you.

We are fully in agreement with the comments submitted to you on this same subject by the Lower Colorado River Authority, and the City Public Service of San Antonio, dated September 10th, 1991.

We estimate that if the requested alternative were provided, 12 of our small, old units would qualify, saving PG&E ratepayers $6-million with what we believe to be no measurable impact on the national data base for NOX.

All the units in the country that are gas and oil fired units below 30 percent contribute less than one-half of one percent to the national total NOX emission.

And, here we're talking a slight increment of that.

I've stated before that we greatly appreciate the alternative monitoring provisions already provided, and we are hopeful that the three changes that we have proposed will be considered and incorporated.

I'd be happy to answer any questions. And, if I can't, I'd be happy to make additional submittals.

I do have written copies of something that looks fairly similar to the testimony I've provided. As you know, at the last minute you always change things around a bit. There are no factual changes. And, I don't remember who you said I should have given those to.

MS. GRANT: I think -- how many copies do you have?

MR. STREHLITZ: I have nine.

MS. GRANT: If you could give one to me and one to the court reporter. Okay?

MR. STREHLITZ: You can have two, you can have lots.

MS. GRANT: That's all right.

Thank you very much. I don't have any questions, did you have questions?

MR. STENBURG: On the NOX, what you're proposing, basically, as I understand it, to do estimates

using your model on the emissions as opposed to actual in-stack monitoring?

MR. STREHLITZ: Well, I wouldn't call it an estimate, 'cause it's based on an actual test data, if you will, from the unit. Of what the NOX emissions are at any given load.

And, you can do, certainly, various curve fits to that. You can be on the slight high side.

The scatter on this data isn't all that wide, if you do a good job of obtaining it in the first place.

And, we use, you know, in-stack chemoluminescent monitors with multi-point traverses, and do a pretty good job of establishing what our curves are.

MR. STENBURG: Have you ever done any after the fact calibration, to go in and see, based on what your predictions would have been, what the actual omissions were?

MR. STREHLITZ: That's hard to do. The actual emissions are the ones we calculate.

We do have some in-stack monitors. The old Part 51 monitors, and our air districts have got much more confidence in our computer calculations than they do on what comes out of the continuous emission monitors.

Part of the problem with the emission monitors

is the data loss gaps. Whereas, the method we utilize utilizes the actual recorded unit load data and there are no gaps in that.

And, so since we're talking about units that are not heavily utilized, and that are gas dominated, my feeling is that this is a very accurate way of calculating it.

MR. STENBURG: Thank you.

MS. GRANT: Thank you.

I'd like to place a copy of the PG&E exhibit that was handed out earlier in the testimony in to the record as Exhibit 1.

(**WHEREUPON, EXHIBIT 1**

IS IDENTIFIED FOR THE RECORD)

MS. GRANT: Is Mr. Nelson here? Or anybody from S.C.E.?

The next speaker will be Mr. Richard Kahn.

PRESENTATION - GAMMA-METRICS

by Mr. Kahn

MR. KAHN: Okay. My name is Richard Kahn. I'm from Gamma-Metrics out of San Diego, California.

The subject I'm going to comment on is 40 CFR Part 75, continuous emissions monitoring.

And, the objective of this presentation, these

comments, are on our product, which is the elemental coal analyzer.

Elemental coal analyzers on-line and off-line are commercially available and widely used. These devices offer cost effective and highly reliable alternative for providing substitute data for continuous emissions monitors, CEM's, whenever backup is needed.

Although the capabilities of our device,the elemental coal analyzer, may well be used as such, it's not the intent of this testimony today to propose that it should be mandated as a primary or secondary backup technology.

Rather, Gamma-Metrics proposes that E.P.A. legislation will allow utilities to use the results of our technology to demonstrate it's conformance with legislation.

So, specifically our comments is that Gamma-Metrics is requesting that this legislation acknowledge two viable methods as alternatives for substitution of missing CEM data at coal fired plants.

Method 1 that we're proposing is that on-line elemental analysis ahead of the bunkers, coupled with commercially available silo flow model -- that's Method 1.

Method 2 is, we're proposing off-line

elemental analysis associated with as-burned samples installed on each feedpipe after the bunker. And I'm going to go in to that a little bit deeper as we go on.

Why should E.P.A. include elemental coal analyzers in the list of compliance technologies? A few were mentioned in your docket.

Well, the answer is that elemental coal analyzers are precise. They have proven their capability providing accurate analysis data on most of the parameters called out by the pending legislation.

It is also probably the most accurate technology commercially available today for measuring sulfur in coal.

Other important analysis parameters include moisture, ash and the ash mineralogy, BTU, pounds SO_2 per million BTU, which is a calculation, and numerous other parameters, also with accuracies very comparable to that of ASTM laboratories.

Also, the devise is highly reliable due to the simplicity of the design. For example, it has very few moving parts. The elemental coal analyzers routinely achieve performance reliabilities of 98 percent or better.

It's an accessible technology. Gamma-Metrics' elemental analyzers are now in its third generation and is

fully developed production units.

To date Gamma-Metrics has installed over 30 on-line coal analyzers which achieved over 60 combined operating years.

The timeliness of our product, Gamma-Metrics' on-line elemental coal analyzers provide a new analysis, independent of the previous one, every minute.

We have also an off-line device that I'll talk about a little bit today, which provides an analysis as rapidly as every ten minutes. About the time of my presentation.

A description of elemental analyzers is found over here. There are basically two types of elemental coal analyzers. One is used on-line and is suitable for providing an "as-burned" analysis of the coal ahead of the bunkers. The other is off-line and can be used to analyze coal as it exits the bunkers.

So, first on-line coal analyzers.

As stated earlier, the Gamma-Metrics' on-line elemental coal analyzer is a proven and relied upon technology in the utility and coal industries today. Gamma-metrics offers two models, one that analyzes a full stream of coal, it can take up to a thousand tons per hour of coal, and another model that analyzes a sampled stream

at up to 200 tons per hour.

At a minimum, these instruments provide users of the technology with the real-time capability of monitoring the concentration of elements present in any coal stream. And, they're updated, again, each minute. These timely analyses include full ultimate and mineral matter analysis, which includes, again, the sulfur, total ash, et cetera.

But, also we can compute properties, which are very valuable to the plant operation itself. Ash fusion, volatile content can all be computed.

The technology employed by this device is prompt gamma neutron activation analysis. It relies on the phenomenon that every element, when exposed to a very low level stream of neutrons -- and I have some cut-away diagrams of this product in this testimony -- responds by releasing a gamma ray.

Key to this technology is the fact that each and every element gives off a gamma ray at an energy level that is unique to that element of its origin.

A high speed computer counts and sorts the gamma ray events by energy levels, producing a spectrum. And the spectrum is then mathematically divided into its component parts.

Analyzer uses have utilized information to achieve some form of process control benefit to date. The most popular applications of the coal analyzer to date are on-line coal quality monitoring, sorting, and blending.

Aside from the sheer volume of coal analyzers purchased, there are two other clear signals of the effectiveness and overwhelming acceptance of this technology. One is that the esteemed International Energy Agency, the IEA, Coal Research Office, has published an entire volume on the on-line coal analyzers.

Another signal of acceptance is provided by the ASTM. ASTM is now writing a standard for on-line coal analyzers. In the meantime, until this is achieved, one point to be made is that until they do have a standard, the present users employ ASTM's interlaboratory reproducability standards to verify the accuracy of the instrument.

Again and again, the on-line elemental coal analyzer, and the off-line, have proven to exceed the ASTM standards.

And, I've attached with the testimony some performance plots comparing the analyzer with the laboratory.

Okay. The other device is the FastLab.

Essentially what we've done is taken the same technology that we use in our on-line device, we packaged in to a unit that can take a six liter sample. And it uses, again, the same type of technologies to analyze the coal sulfur, ash, moisture and BTU, and it can be used also.

My next subject is answering the question, how is the elemental coal analyzer applied in data substitution application?

The following on-line elemental analyzer and off-line elemental analyzer compliance methodologies are both extremely viable technology options. They both will produce an accurate analysis of the as-burned quantity of pounds SO_2 that can be reported after the sulfur retention in the ash is accounted for.

Now, the first method where an on-line coal analyzer -- that's the one that, in most cases, takes the full stream of coal -- is analyzing on-line ahead of the bunkers.

The first method that Gamma-Metrics proposes for consideration is one that includes using this on-line analyzer positioned ahead of the bunkers. In order to accomplish this application, an analyzer would need to be coupled with a coal silo flow model, to properly determine the instantaneous quality of the bunker's output stream.

This model was needed because coal blending can occur within the silo, and a first-in-first-out principal does not always apply.

With this developed model, the analyzer system can determine the exact coal quality fed to the boilers during the time period requested.

A proven silo feed model is commercially available, which possesses the sophistication required for the application. Developed by EPRI through Praxis in 1988, its fidelity has been verified at two installation sites.

In this scenario, the coal analyzer's accuracy can be regularly proven to be within ASTM standards through taking a secondary sample from the reject stream of the analyzer itself.

A major benefit offered by this approach is that it can determine the coal's SO_2 data of the coal, while the bunker is being loaded, rather than after the fact. Once it's in the bunkers, it's burned. It's over with.

This advanced information will give the utility the opportunity to take corrective action, rather than fill up a bunker with coal that will definitely create an exceedence [sic], which could lead to a forced

outage or a derate.

In addition, the plant can make use of the timely elemental information to improve its heat rate, or to increase the efficiency of its desulfurization equipment. This is a side benefit to the legislation of having, accepting this as a substitute data option.

Now, there's a second option that I'll talk about that uses the FastLab, the off-line analysis device that takes a six liter sample.

In this method, an extractive probe gathers a representative coal sample from the coal pipe between the bunker and the boilers, as frequently as once a minute. The probe drops a sample into a chute which feeds the six liter sample bucket for the FastLab, and is transferred manually over to the FastLab for an analysis. It gives an analysis in ten minutes.

As with the silo model I mentioned earlier, the as-burned sampler is field proven and commercially available.

Also, as with the previous approach, the FastLab's accuracy can easily be verified regularly with an ASTM laboratory.

In conclusion, the on-line elemental analysis technology should be included in the group of technologies

considered compliance technologies.

The providing of substitute data for CEM's missing data periods, this on-line coal analyzer and off-line coal analyzer can be an excellent application.

We sincerely appreciate the opportunity that E.P.A. has given us to comment on its legislation.

MS. GRANT: Thank you.

Questions?

MR. STENBURG: Have you ever actually compared your estimate with what was coming out of the stack? Sort of do that --

MR. KAHN: Yes. Over at one of our customers, I've included a customer list with my testimony.

American Electric Power had directly run the analyzer and compared it with the stack, without going through an active storage file. And it compared very, very favorably to the point where it was part of the overall acceptance of the technology at the power plant.

The, well maybe -- I have some people from Praxis. I guess you're asking about modeling as, do you have any questions about the silo model? We have some people over here that can answer any questions you might have as to the silo model which can predict the flow of the coal through a silo very accurately.

MR. STENBURG: I think my question was just more, you know, the validation of the model or the estimate, if you will, based on --

MR. KAHN: Yeah.

MR. STENBURG: -- actual stack monitoring.

MR. KAHN: It has been done in the past.

MR. STENBURG: Okay. Thank you.

MR. KAHN: Thank you.

MS. GRANT: The next speaker is Doctor Jerome Kurz.

PRESENTATION - KURZ INSTRUMENTS

by Dr. Jerome Kurz

MR. KURZ: Good morning. My name is Jerry Kurz. I'm the president and owner of Kurz Instruments in Monterey, California.

We are a primary manufacturer and developer of flow monitors for industry and a variety of applications.

Presently, our equipment is being evaluated at several locations in the country for the flow monitor. We have equipment running at TVA right now. And I know the E.P.A.'s familiar with that program.

We also, part of the basis of this legislation is based on evaluation of flow monitors in the field, and we have some excellent examples of our equipment in

operation for several years. Like the surf project that's mentioned as a footnote, and a few others.

I've been making thermal anemometers, very rugged, very tough, and very strong, to measure flow, for about 15 or 20 years.

And, we have them in hundreds of applications for combustion air boilers, major power plants all over the country, including the plants that we're talking about in this list, with 40 CFR 75.

The advantages of our equipment is that it's quite simple, very easy to maintain. Doesn't tend to get dirty in dirty environments, which is a surprise to most people. And, is easy to install. And provides a tremendous amount of flexibility because you can make it shorter or longer, more probes or less.

I have some comments on the, the 40 CFR 75, the flow monitor portion. I believe it would be document control number A-90-51.

And, my comments came over the facts -- they don't look too good, so I'm going to submit these later.

These are fairly detailed comments. Hopefully, they'll be, as an expert in this field, maybe they'll be useful to some of the certification and operating requirements.

Actually, in overview, I'm impressed with the work that's been done so far. I think they've gotten a lot of good points.

Number one, I do not believe that the orientation tests need to be made during certification, providing supporting test data for the flow monitors shows that the unit meets the four percent error over a ten degree rotation, or yaw angle. In other words, it should be within four percent in any direction.

Once you do this for a piece of equipment you should not have to do it every time. It should be part of your supporting test data.

And, it just takes time and it's difficult to do. Because, once you put it in the stack you lock it down and it's, you're going to have to pull out the bolts, move it, and so forth. So, I think that's unnecessary.

Number two, as proposed in seventy-five-point-two-four, paragraph two-point-two, appendix A, I believe that in order to reliably perform a daily calibration test, one must impress the flow monitor sensors with a known velocity and verify the entire system calibration up to the data, and from the point of the probe in the stack, all the way through to the data handling system. And, do that at no less than two stack flow rates.

Number three, we do not believe that purging a differential pressure device automatically makes it unnecessary to perform a true calibration test.

I can elaborate on all of these subjects.

Number four, it's our belief that the electronic calibration test suggests for an ultrasonic flow monitor is truly on an electronic stability test and not a true flow calibration test.

Because the ultrasonic device measures the average velocity along the diameter of a circular stack, it measures the average velocity along a path, and, therefore, it does not properly weight (phonetic) to area inside the stack, such that you can have equal average velocities and have quite different stack flow rates. Which means that the device is very sensitive to stack velocity stratification, which is well footnoted in the 40 CFR 75.

Number five, we do not believe that E.P.A.'s correct in assuming that a zero and span (phonetics) test for an ultrasonic flow monitor is analogous to a pollutant zero and span calibration test. It's not the same thing.

Number six, we are delighted to see that E.P.A. recommends adjusting the flow monitor calibration based on the reference test data.

We believe that the basic correction should be used for all reference test stack velocities, not just one.

E.P.A.'s indicated it thought it was too difficult and unnecessary. It is not at all. We do it all the time in our equipment. That means we can track the system from low flow to high flow, completely.

If a daily calibration test is developed, we suggest that the flow monitor data be corrected on a daily basis. Or more. Continually. Just as it may be adjusted based on the reference method every quarter. But, why not do it every day if you have a built in calibrator.

Number seven, it appears that the flow accuracy of plus or minus a foot a second for stack flows below ten feet a second, is a little ambiguous, because it implies that you'd have an accuracy of less than ten percent, one foot out of ten.

And, most devices, except for ours, would have a very difficult time measuring to precision one foot a second. Especially a differential pressure device. That's 60 feet a minute. That's walking across this room in a minute. Or halfway across the room.

Number eight, we are concerned about the accuracy of the E.P.A. reference method two.

It is well known that a type "S" pitot tube is orientation sensitive in both directions, yaw and pitch. And has a calibration factor that varies with the differential pressure itself, which most people do not correct for, and has very poor sensitivity below about 700 feet a minute, at which point E.P.A. does not recommend using it.

And, in addition, since the velocity measurements are taken sequentially, as you go across the stack that makes the measurements, the stack flow may change during the compliance test, giving more uncertainty as to the total flow.

I would be, I would be surprised if the accuracy of the reference method, which is method two, would be any better than two or three percent, with all those variables.

My concern is that we put a lot of emphasis on your statistics on the randomness, and so forth, of the monitor.

I think you'll find that the larger part of the statistical deviations come from the reference method itself.

Normally, also, the error of the secondary device is considered to be four times the error of the

calibration standard. This is a standard specification for high quality work in instrumentation laboratories that do calibrations.

We believe the repeatability of our thermal flow meter is far greater than the repeatability of the method two test data. Method two test equipment.

We feel that the accuracy of the reference method must be significantly improved in order to ensure that the emission credit system be successful.

As I read everything you've written here, you're basing all of these allowances on reliable, honest to God numbers coming out of the stack.

So, a ten percent error in emission rate, at a dollar a pound, I believe you analyzed, could be millions and millions of dollars, and would easily justify having an instrument that was much more accurate.

One solution that I would put forth would be to use several independently operated standard pitot tubes rather than a sequential method, so that you have all the data at one time. They are much more, have a better calibration factor, and they're not as nearly orientation sensitive.

Number -- I guess it's number nine. I numbered this wrong, so bear with me. I'm going to call

it ten, but I think it's really nine.

It appears that the alternate CEM devices need only to agree with certified CEM devices. I don't understand this. Why is this, why is this a requirement? Why don't they use the standard method to certify an alternate device?

Again, you're using a secondary standard to calibrate another secondary standard.

This seems very loose and ill-defined. I think that needs to be gone over much more carefully.

It's also not clear, on number ten is not clear how the actual accuracy of the entire CEM, in order to get the pounds per hour, which is what -- I'm just tickled to death that you've done this, because it's so important -- it's not defined in 40 CFR 75.

If the air, relative accuracy of the flow monitor can be 15 percent, and I can't remember what the SO_2 monitor is, 'cause I don't make them. I think it's seven-and-a-half percent. What relationship are we going to use to establish accuracy of the product of that concentration times mass? It's not specified.

And, I think you're in for a few surprises.

Do we use the square root of the sum of the squares of the air? We have people at E.P.A. that could

certainly come up with a statistical way to do that.

But, it seems like that's something that needs to be done.

I think you're looking at some errors that are in the order of, you know, 15 percent is a tremendously large number, and if you tack on that seven-and-a-half percent from the SO_2 monitor, and, of course, I think that the air of the, combined, would be just slightly more than 15 or 16 percent, that's a huge number.

Number 11, it appears to be an ambiguity about the dirt on a thermal flow monitor.

There haven't been very many restrictions placed on the thermal flow monitors, which I'm pleased about. But, I think part of it is that they don't understand them as well as they, as some of the other devices.

One paragraph says they should be inspected frequently. And, further in the quote, it says that it should have a mechanism to clean it. So, there's a little bit of a difference there. I'd like to see that cleaned up.

But, my recommendation is that, since the dirt accumulation is a strong function of particulate characteristics, and every plant is different, I suggest

that whether or not it's required to be cleaned or inspected be based on the quarterly certification tests. That's the, if it has to be cleaned every month, every quarter, it'll come out when you do the certification and the quarterly tests thereafter.

Because of the economics involved, I think it's clearly to everybody's benefit to suggest redundancy for this equipment up on the stack.

If it shuts down for one day, unless we use some of the ideas that were presented before, to use the worst data that you've had in a year for the missing days would probably cost more than the cost of having a redundant instrument.

And, you'd have these instruments both -- two instruments could be, go through the certification at one time. One could be on standby or pulled out and put back in if it's needed.

Redundancy, I think, is a very important part of this.

Maybe you should just tie it to economics and let the users decide. But, I think it'd be smart to have the redundancy, so you know you have very high availability.

I'd like to thank you for this opportunity,

and good luck.

MS. GRANT: Thank you.

The next speaker is Mr. Cavanagh.

PRESENTATION - NATIONAL RESOURCES DEFENSE COUNCIL

by Mr. Cavanagh

MR. CAVANAGH: Thank you. My name is Ralph Cavanagh, spelled C-a-v-a-n-a-g-h.

And, I'd like to turn the subject away from monitoring, if I might, and look, spend the nest ten minutes just focusing on the conversation and renewable energy allowance. And, the way the regulations propose to address it.

By background, I should note that I have headed the energy program of the Natural Resources Defense Council for the past 12 years. I spent most of that time working with utilities on the development of energy efficiency and renewable energy programs, and on the least (phonetic) cost planning processes that this legislation is explicitly designed to promote, in coordination with the national energy strategy.

I have worked extensively with utilities in that capacity, and also as a member of the energy subcommittee of the President's commission on the environment. And on the energy engineering board of the

National Academy of Sciences.

The view I give today are solely those of NRDC, though. And, I should note, we will be presenting written comments on the full rule. But, I'll focus today just on the conservation and renewable energy allowances, because that corresponds most closely with where my work has been over the last 12 years.

As I'm sure you know, the purpose of that reserve is to set aside three hundred thousand allowances, specifically to promote renewable energy and energy efficiency developed by our utilities, consistent with a least cost energy plan.

And, it was a specific objective of Congress, particularly as regards the energy efficiency part of that reserve, that it be limited to utilities that have been given financial incentives by their commissions to pursue efficiency, so that they are not in a position of losing money as a result of the reduced sales that accompany successful conversation energy programs.

Now, there are features of this rule that we very much like. For example, we congratulate you for limiting the definition of conservation measures that qualify for allowances to improvements in end-use efficiency, as opposed to improvements in transmission or

power plant efficiency.

We think that's clearly the result that was intended by the Congress, and we congratulate you for rejecting claims to the contrary that might have swallowed those allowances.

I'm going to concentrate, given the limited time, on areas where we think improvements can be made. And, I'm going to focus on the definition of renewable energy.

The way you've defined and described least cost planning in the rule, the issue of net income neutrality, what has to be done to make sure that utilities, in fact, are financially rewarded for successfully pursuing conservation.

And the question of measurement. How do we make sure that, in fact, we are getting the energy savings that are being claimed, and that these allowances are, in fact, being appropriately delivered.

On renewable energy, I want to simply make one overriding point. That I think there's a terrible, terrible mistake that needs to be corrected in the rule.

And, that is the decision to classify municipal incinerators that happen to recover their, some of their waste heat as energy. To classify them as

renewable energy.

I think that's the metaphorical equivalent of an earlier administration's attempt to classify ketchup as a vegetable for purposes of school lunch programs. I think it's an embarrassment to the administration.

I think anyone connected with this provision of the Clean Air Act, had they been told that renewable energy might be redefined to create a windfall subsidy for municipal solid waste generation would have been horrified at the proposition.

The only support I can find for it in the rule is the point that the drafters of the rule wanted biomass to qualify and that PURPA, legislation passed 13 years earlier, includes municipal solid waste generation in its definition of biomass generators.

But, remember that PURPA, unlike this provision of the Clean Air Act, was not designed specifically to promote renewable energy.

PURPA was legislation designed to promote, in general, non-utility generation. Natural to include municipal solid waste generation in that mix, wholly unnatural to include it as part of an effort to promote renewable, particularly when municipal solid waste generators have the capacity under the rule as you

proposed it to swallow up fully half of the allowances that renewable energy's likely to be able to earn.

Now, Hap Boyd is here from the Coalition for Energy Efficiency and Renewable Technologies. His company is a biomass generator in the pure form of that term. And, I'll let him pursue this point further.

But, I want to begin by emphasizing again that I think there's a real, it's a potential embarrassment, and it potentially can destroy much of the good that this rule can do for renewable.

I also would note that, in defining renewable energy -- and I think this is an oversight -- section seventy-three-point-eighty-one of the rule does not note the requirement of consistency with the least cost plan as one of the criteria that will determine whether a renewable energy generator qualifies for allowances.

Again, I think it's an oversight because the statute itself clearly requires the consistency, for both renewable and conservation. And, if that oversight is corrected, it will at least help exclude the worst abuses on the municipal solid waste side.

In terms of least cost planning, a critical definitional point, because the conservation and renewable energy allowances, as I've mentioned, have to be

consistent with the least cost plan -- defining that's obviously a challenge. You have to leave some flexibility.

But, there are two core elements of any least cost plan, I think, that need more flushing out in the rule. And, they're both mentioned in section seventy-three-point-three of the rule.

One is, that in doing a least cost plan, which is intended to be a rigorous assessment of both demand and supply side options for minimizing energy services costs, that in doing it you have to look at a full range of options. And in doing that your objective has to be to develop the lowest possible system cost for the utility system.

Now, both of those objectives are noted in section seventy-three-point-three of the rule, but nothing is done in the subsequent discussions of least cost planning in the rule.

For example, in section seventy-three-point-eighty-two, nothing is done to explain what those concepts might mean. Nothing is done to flush them out. And, you end up with the result that it's at least conceivable that a utility that looked at few demand side options and a few supply side options consistent with past practice, but

made no effort to do a full inventory of available options, that such a utility could be construed as complying with the rule.

We urge you to flush out that you mean a full range of options. You're going to require a comprehensive inventory on both the demand and supply side, that reaches out beyond what the utility's already doing.

And, also we urge you to specify that the lowest system cost objective, which is set out in the legislation, includes environmental costs.

The rule proposes to allow the option of incorporating environmental costs in the overall calculation. But, when Congress specified lowest system cost, set out a definition in earlier legislation, the Pacific Northwest Electric Power Planning and Conservation Act, the only other use of this term that I'm familiar in the federal statute books, it made very clear that lowest system costs includes quantifiable environmental costs.

And, we think you should do the same.

The notion that you can minimize system costs without taking any account, whatever, of environmental costs, is a notion that we hope the U. S. Environmental Protection Agency will reject.

So, rather than simply making it optional to

take those costs in to account, we urge you to make it, to require it as, indeed, the State of California does, by State legislation, and as all our utilities do.

Two other brief points on the other two items that I said I would address.

The question of net income neutrality. Very important, I think, in terms of the national impact of this rule. Because, what the Congress was saying was that it didn't want to grant allowances unless states had acted to solve a pervasive problem around this country.

Which is, the successful utility finance energy conservation programs automatically lose utilities' money, unless regulators do something to fix it. Because, those programs reduce sales and utilities' profits are tied to their sales volumes.

You have appropriately laid out in the rule a number of options for dealing with this. But, one in particular we urge you to drop. Because, we think it is an invitation to abuses at the state level.

And, that is an option that offers the states the opportunity to meet the Act's requirements, by doing an annual calculation of how much energy the utility saved. And, then giving the utility a sum of money that reflects the lost revenues from those estimated savings.

Under such a system, the most profitable conservation programs to utilities are those that look good on paper and save no energy at all. Because, if there are large paper savings, they get a large payment from customers. And, if there's no energy savings in practice, they also, in effect, get -- they don't lose any revenues from reduced sales, because there are no reduced sales.

Precisely because measurement is an evolving science, precisely because abuses are possible, you should not create a compliance option that effectively makes nonperforming conservation more profitable than performing conservation.

And, by creating this option which says it is sufficient to project measured, to project savings from conservation and then restore those lost revenues only, it is sufficient to do that, as opposed to taking the next step, as California has done, and fully decoupling utilities' net revenues from sales volumes.

You are opening the way to abuses that, again, we urge you not to invite.

We also urge that the rule recognize that it is not enough simply to restore lost revenues from unsold kilowatt hours, if you're trying for real income

neutrality between conservation and power generation.

The alterative to conservation for utilities is investing in power generation, and in transmission. Those investments earn a profit for utilities under traditional rate making.

If you don't, if the states don't provide some comparable opportunity to earn a profit on conservation, you don't have true income neutrality.

And, that's what you should be insisting on. And, it may well be that your administration of these requirements will have the greatest impact, and the greatest positive impact, on state regulation and state energy policy of any other part of this regulatory system.

My final point, and it's very brief, goes to the issue of measurement and verification.

We want to be sure that, for the energy conservation programs, we're, in fact, getting savings and sulfur dioxide reductions. And, as I mentioned, this is an area in its infancy.

You are proposing in this rule to defer completely to state regulators on their verification. And, we think deference would be appropriate in states where there are some financial consequences associated with measurement results.

In that case, the state regulators have a real inducement to pay close attention to measurement and verification.

And, that's true, for example, in California. But, there are jurisdictions that don't make measurement and verification, an issue that has financial consequences in the state regulatory system.

States, for example, that are looking at simply letting utilities rate-base conservation, meaning let them earn a return on the amount invested, without any reference to how much electricity is actually saved, and to defer to measurement and verification results by those states is to, again, invite abuses. Because, the state has no incentive, whatever, to make sure that those measurement estimates are, in fact, accurate.

Again, we'll be expanding on these points in writing, and we very much appreciate the opportunity to address you.

We will also, obviously, be commenting on a much broader range of issues in our written comments from NRDC, than the ones I've taken on today.

MS. GRANT: Thank you.

MR. STENBURG: Under the income neutrality, where you mentioned --

MR. CAVANAGH: Yes?

MR. STENBURG: -- the conservation programs that look good on paper, but, in fact, aren't performing.

Do you have any generic examples of what that might involve?

MR. CAVANAGH: Well, my concern is, there are two ways to deal with lost revenues. And, I think it's important for E.P.A. to keep this in mind. Two very different general strategies you can follow.

One is an automatic adjustment that ensures that fluctuations in sales volumes don't affect a utility's profits. We've got that in California. They've just brought it in to Washington State, showing up, starting to show up in some other parts of the country.

This is the so-called decoupling mechanism. There's no way to gain that mechanism.

Because, since it's an automatic adjustment that corrects for fluctuations in sales, that regulators didn't expect when they set the rates, there's no way by either having nonperforming conservation or promoting increased sales that you can effect profits. You have no incentive to gain in the system.

If, instead, you're told no, we're not going to have an automatic adjustment. We're not going to

decouple sales from, sales volumes from profits. Instead, we're simply going to try to identify the number of kilowatt hours saved every year and restore those profits to you. You can gain.

Because, under that system, if you can manage to look good on paper, but save nothing in practice, if you can manage somehow to distort the measurement results so that they look good but nothing's happening, you'll make more money than if, in fact, you were doing a good job and saving lots of kilowatt hours.

Now, I can't give you an illustration of where that's happened. We're trying to prevent systems like that from being adopted. And, we're concerned that some states may be looking at them, in part, as a response to this E.P.A. rule.

But, I think it's clear E.P.A. doesn't want to set up a system where a conservation program that performs better than anticipated is less profitable than a conservation program that performs much worse than anticipated.

That's exactly what you will have if you let states simply come in and restore lost revenues in the mechanical fashion that I've just described.

If, instead, you insist on a full decoupling

of net revenues from sales volumes, which is, again, in place for every utility in this state, at this moment, you remove the gaming incentive.

And, I would just add, be aware of the gaming incentives, and try to send signals out to the states that you want to see those avoided. And that you don't, in particular, want to tolerate a system that makes nonperforming conservation more profitable than good performing conservation.

MR. STENBURG: Thank you.

MR. CAVANAGH: Sure. Thank you very much.

MS. GRANT: The next speaker is Mr. Boyd.

PRESENTATION - COALITION FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

by Mr. Robert Boyd

MR. BOYD: My name is Robert Boyd. I'm director of regulatory affairs for Kennetech Corporation. We're involved in wind energy and biomass.

And, I'm here today in my capacity of chairman of the Coalition for Energy Efficiency and Renewable Technologies.

This is a group made up by a group of renewable energy producers of demand side management companies, and of environmental groups including the NRDC,

Sierra Club, and Union of Concerned Scientists.

I would also like to address one portion that Ralph talked about. The conservation and renewable allowance.

As a company involved in an emerging technology, we again think that the definition, which includes the solid waste incineration, is not really something that we want to encourage as a country, or that the legislation intended to encourage.

Solid waste fuel, or solid waste disposal and burning is really a waste disposal strategy, it's not an energy strategy. It's a way to get rid of things that we don't know what to do with.

This type of technology's going to go forward regardless of the credits that the E.P.A. might allow it. These credits are merely a windfall to this particular technology.

And, this is because they already have subsidies in terms of municipal bond financing, they can play with tipping fees in order to make that part of the business pay off.

We really don't feel that these meet the least cost planning goals, too.

Emerging technologies are coming down the cost

curve and are becoming competitive with other forms of traditional generation.

And, having the little extra incentive of these credits will help these technologies compete in the marketplace.

We believe, really, the intent of the legislation was to get utilities to invest in some of these renewable technologies.

And, because most of our facilities are rather small compared to some of the large solid waste management facilities, they, the solid waste management facilities would use these credits rather rapidly, and to the detriment of these developing technologies.

So, I guess, also I'd like to talk a little bit about biomass, as a comparison technology to solid waste management.

Our particular plants are true cogeneration plants. We're using wood waste products that have no other place to be used, and we're burning these. This is actually cleaner than if you would bury this in the ground, in terms of the decomposition products that would occur.

This is a way of having a steam host, generating steam, giving somebody something they need

industrially, and generating electricity as a byproduct of this.

And, we think this is really the meaning of the law, or what the law intended to benefit from this type of a credit.

And, in conclusion, I'd like to urge the E.P.A. to reconsider their definition, and to remove the solid waste incineration.

Thank you.

MS. GRANT: Thank you.

Is there anybody else here who registered to give comments and who I haven't called?

There was only one other person who had signed up to testify, and I've just been informed that he's not coming.

So, I now declare the hearing adjourned. Thank you very much.

(WHEREUPON, THIS HEARING WAS ADJOURNED AND CONCLUDED AT 10:37 A.M.)